

## 51nano-N-980-2.3-TH4-P-5-2-18-0-150

Fiber-coupled low coherence laser source with single-mode fiber cable (OEM version)



### FEATURES

The Laser Diode Beam Source of type 51nano-N-980-2.3-TH4-P-5-2-18-0-150 has a [reduced power noise](#), [a reduced coherence length](#) and [a low speckle contrast](#).

- Reduced power noise: typ.  $< 0.25\%$  of  $P_0$  (RMS, Bandwidth  $< 1$  MHz)
- Reduced coherence length: coherence length  $\approx 300\ \mu\text{m}$
- Reduced speckle contrast
- Wavelength: 980 nm
- Laser output power: 2.3 mW
- Single-mode fiber cable
- FC APC connector (8°-polish)
- Modulation analog and TTL
- OEM version w/o interlock and w/o key switch

Alternative: Laser Diode Beam Source [51nano-S](#) (with key switch and interlock) or with [single-mode](#) fiber cable

## DESCRIPTION

The fiber-coupled Laser Diode Beam Source of type 51nano-N-980-2.3-TH4-P-5-2-18-0-150 has a [reduced power noise](#) (typ.  $< 0.25\%$  of  $P_0$  (RMS, Bandwidth  $< 1$  MHz)), [reduced coherence length](#) ( $\approx 300\ \mu\text{m}$ ) and [a lowered speckle contrast](#).

### Electrical features

The output power is adjustable using a potentiometer or using the two modulation inputs for analog and TTL.

**Fiber cable**

The source is fiber-coupled to a single-mode fiber cable. As a result the beam profile is rotationally symmetric with Gaussian intensity distribution. The fiber cable is equipped with an FC APC type connector (8°-polish). The fiber cable has a strain-relief and a protective sleeving (Ø 3 mm). Standard cable length is 150 cm.

Options:

- Polarization-maintaining fiber
- Core-centered (single-mode only)
- Multiple fiber output cables (51nanoC, single-mode only)
- Other connector types including FC PC, DIN or AVIO, or E2000
- Other fiber cable lengths
- Incorporated vacuum feed-through

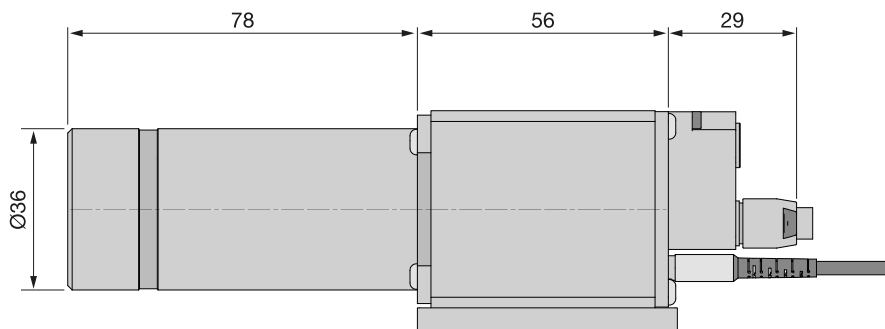
**Laser safety**

This OEM version has no key switch or interlock and is not conform to EN 60825-1.

It can be operated conform to EN 60825-1 by using a [switchbox](#).

As an alternative, a version with key switch and with interlock (conform to EN 60825-1) is available

as type [51nano-S](#).

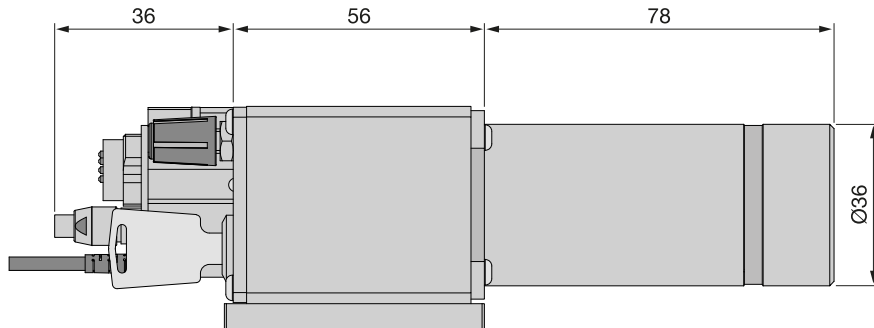
**TECHNICAL DATA**

51nano-N-980-2.3-TH4-P-5-2-18-0-150

<b>Order Code</b>	51nano-N-980-2.3-TH4-P-5-2-18-0-150
<b>Will replace</b>	51nanoFCM-N-980-2.3-TH4-P-5-2-18-0-150
<b>Series</b>	<a href="#">51nano-N (single-mode)</a>
<b>Laser class</b>	3B
<b>Wavelength</b>	980 ± 10 nm
<b>Band width</b>	0.7 - 4 nm
<b>Output power</b>	typ. 2.3 mW
<b>Power adjustment</b>	< 1 - 100 %

Power noise	typ. < 0.25 % of P <sub>0</sub> (RMS, BW < 1 MHz)	
Coherence length	≈ 300 μm	
Fiber cable	single-mode	
Fiber type	SMC-980	
Nominal fiber NA	0.12	
Effective fiber NA <sub>e</sub> <sup>2</sup>	0.093 ± 10 % (1/e <sup>2</sup> )	
Mode field diameter MFD	6.7 μm ± 10 % (1/e <sup>2</sup> )	
Fiber cable length	1.5 ± 0.05 m (standard)	
Fiber cable type	Ø 3 mm with Kevlar strain-relief	
Fiber connector type	FC APC (standard)	
Power stability	max. 12 % power variation between 15°C and 35°C	
Electronics type	H	
Electr. cable length	1.5 ± 0.1 m (standard)	
Connector type	5 pin (male, Lumberg SV50)	
Supply voltage	5.0 ± 0.2 V	
Max. current consumption*	260 mA	
Modulation inputs	Analog	TTL
Max. input voltage	5 V	5 V
Voltage for P <sub>min</sub> / P <sub>0</sub>	0 V / 2.5 V	< 0.8 V / > 2.4 V
Input impedance	22 kOhm	22 kOhm
Max. modulation frequency	100 kHz	100 kHz
Time delay ON/OFF*	2/0.3 μs	1.5/0.1 μs
Rise / fall time*	1.0/1.0 μs	1.0/1.0 μs
* Typical value. Depends on laser diode.		
Operating temperature	15 - 35°C ± 0.5°C	
Warm-up time	approx. 10 min	
Air humidity	max. 90 % non-condensing	
Weight	530 g	
Dimensions	50 x 58 x 166 mm	
Protection Class	IP30	

Dimensions (for a complete dimensional drawing please refer to the downloads section)



## TECHNOTES

- [Fiber-coupled low noise beam source](#)  
[Comparison of a low noise laser source to a conventional laser source](#)
- [51nano: Electronics Type H](#)  
[Electronic features for electronics type H](#)

## DOWNLOADS



[000824000400.pdf \(Dimensional drawing\).](#)



[Conformity\\_51nano\\_2023\\_E\\_web.PDF \(CE certificate\).](#)

## ACCESSORIES

<b>PS051003E</b>	Power Supply 5 V
<b>SBN050501</b>	For laser diode beam sources of electronics type S/C/P/H and 5 V power supply
<b>FIBER COLLIMATORS SINGLE-MODE/PM</b>	Fiber Collimators for collimating light exiting a single-mode or polarization-maintaining fiber cable

## RELATED PRODUCTS

**51NANO-N  
(POLARIZATION-  
MAINTAINING, OEM)**

Fiber-coupled low coherence laser source with  
polarization-maintaining fiber cable (OEM version)

**51NANO-S (SINGLE-  
MODE)**

Fiber-coupled low coherence laser source with  
single-mode fiber cable

**51NANOFI-N WITH  
FARADAY ISOLATOR  
(PM/OEM)**

Fiber-coupled low coherence laser source with  
polarization-maintaining fiber cable (OEM version)

This is a printout of the page [https://sukhamburg.com/products/details/51nano-N-980-2\\_3-TH4-P-5-2-18-0-150](https://sukhamburg.com/products/details/51nano-N-980-2_3-TH4-P-5-2-18-0-150) from 5/2/2024

## CONTACT

For more information please contact:

Schäfter + Kirchhoff GmbH

Kieler Str. 212

22525 Hamburg

Germany

Tel: +49 40 85 39 97-0

Fax: +49 40 85 39 97-79

[info@sukhamburg.de](mailto:info@sukhamburg.de)

[www.sukhamburg.com](http://www.sukhamburg.com)

## LEGAL NOTICE

**Copyright 2020 Schäfter+Kirchhoff GmbH. All rights reserved.**

Text, image, graphic, sound, video and animation files and their arrangement on Schäfter+Kirchhoff GmbH webpages are protected by copyright and other protective laws. The content may not be copied for commercial use or reproduced, modified or used on other websites. [\[more\]](#)